DATABASE REPLICATION USING APPLICATION PROGRAM EVENT PLAYBACK

ABSTRACT

[45]   A system for updating and maintaining multiple copies of a database. An application program sends events to a database server at a primary data site to update, or otherwise modify, data in data store at the site. A tracking process at the database server enters event information into an event log. The event log is sent to other data sites where the record of events is used to recreate modifications to copies of the primary data site's data store. This approach allows multiple other data stores at different data sites to be similarly updated. Event logs, and portions of event logs, can be transferred among data sites with a minimum of coordination and verification, and used to update copies of a data store, or other information. Portions of event logs can be received at a site "out-of-order" from the recording of events at the primary site. When a primary site fails, another site whose data store is sufficiently updated with the event log data can assume the role of primary site. If the original primary site comes back on line then it can be updated with event log data from the second primary site and re-assume primary operations, or remain as a secondary site.

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